2007

Subsoil Moisture Levels for 2006

Mark A. Licht
Iowa State University, lichtma@iastate.edu

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Abstract
Each spring and fall a soil moisture survey is conducted to determine the amount of plant-available water (PAW) to a five-foot soil depth. Adequate soil moisture reserves increase the probability of average or above average crop yields the following season. Producers may use this information to alter their crop management plans according to expected soil moisture levels. Several sampling sites are located at the Western Research and Demonstration Farm and other locations in west-central Iowa.

Disciplines
Agricultural Science | Agriculture

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Mark Licht, field specialist/crops
ISU Extension

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West-central Iowa began the cropping season in very good soil moisture condition with the area's soils holding on average 7.4 in. of PAW. Rainfall was sparse to non-existent during May, June, and July, depleting much of the subsoil moisture that was stored last spring. However, plentiful rains in August, September, and October helped tremendously with recharging the subsoil moisture to current levels.

Spring soil moisture status. The area's soils were holding an average 7.4 in. of PAW. Carroll, Ida, and Sac counties went into the growing season with exceptional subsoil moisture reserves (9.5, 9.6, and 8.4 in. of PAW, respectively). Monona county was significantly low at 3.0 in. PAW.

Fall soil moisture status. Results from the survey across west-central Iowa indicates an average of 7.4 in. of PAW to a five-foot soil depth, which is about 1 in. more than historical averages. Carroll, Crawford, Ida, and Sac counties are above the historical PAW average, while Monona County is at the average.

The current subsoil moisture situation for this area indicates that crop prospects for the 2007 growing season are favorable based on the fall subsoil PAW. Plant-available water for most sites is above normal in the soil profile, but the profile does have room to receive some additional moisture next spring.

Table 1. 2006 spring and fall plant-available subsoil moisture levels.[1, 2]

	Spring		Fall	
	2006 [3]	Historical average	2006	Historical average [3]
	- - - - - - - inches plant-available water - - - - - - -			
Calhoun	7.2	7.9	4.3	6.5
Carroll	9.5	8.9	10.0	7.0
Crawford	6.5	8.8	8.6	6.0
Ida	9.6	7.1	8.1	6.0
Monona	3.0	6.4	4.8	4.9
Sac	8.4	7.7	7.8	5.9
Woodbury	n/a	6.5	8.2	n/a
Area average	7.4	7.6	7.4	6.1

[1]Spring sampling date was approximately April 1; Fall sampling date was approximately November 1. Plant-available water is adjusted to April 1 and November 1 regardless of actual sampling date.
[2]Sampling depth to a five-foot soil depth.
[3]n/a, data not available.